ZURGAPKIN, V.I., inzh.

Problem of the automation of long-distance communications in railroad transportation. Avtom., telem. i sviaz' 8 no.11:28-30 N '64. (MIRA 17:12)

KURGAPKIN, V.I., dorozhnyy inspektor avtomatiki, telemekhaniki i svyazi.

Courses and seminars of telecommunication electricians. Avtom., telem. i sviaz' 9 no.6:42 Je '65. (MIRA 18:8)

KURGAPKIN, V.I., dorozhnyy inspektor avtomatiki, telemekhaniki i svyazi.

Special features of long-distance dial sending units. Avton., telem. i sviaz' 9 no.9:27-29 S '65. (MIRA 18:9)

SHIFRIN, M.G.; KURGATNIKOV, V.M.

New development of organization in the cutting-out department of the "Skorokhod" factory. Leg.prom. 15 no.10:8-13 O '55. (MLRA 9:1)
(Shoe industry)

KURGAYEV, V. V.

"A New Wave Guide Method for Measuring Dielectric Constants of Solid and Liquid Substances (Method of 'Matched Loads')." Cand Phys-Math Sci, Saratov State U, Kuybyshev, 1954. (RZhFiz, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

S/139/60/000/01/024/041
E201/E491

24.3400

AUTHORS: Kurgayev, V.V. and Smagina, A.K.

TITLE: Measurement of the Dielectric Properties of a Polar Liquid as a Function of Temperature Using the Method of a Cylindrical Inhomogeneity in a Waveguide

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, Nr 1, pp 135-138 (USSR)

ABSTRACT: A new waveguide method, developed by Le Bot and Le Montagner (Ref 1), was used to measure the temperature dependence of the complex permittivity of methyl and ethyl alcohols between +50 and -60°C. After a brief recapitulation of the method and its advantages (Ref 2 to 5) the authors list their results, obtained at a wavelength of 3.22 cm, in a table on p 137. Typical results are given below

Temperature (°C)	Methyl alcohol	Ethyl alcohol
+50	ε' = 10.82 (10.87)	ε' = 5.10 (4.71)
	ε'' = 9.40 (9.48)	ε'' = 3.54 (3.79)

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S/139/60/000/01/024/041
E201/E491

Measurement of the Dielectric Properties of a Polar Liquid as a Function of Temperature Using the Method of a Cylindrical Inhomogeneity in a Waveguide

+ 20	$\varepsilon' = 8.32$ (8.35)	$\varepsilon' = 4.49$(4.38)
	$\varepsilon'' = 7.15$ (7.20)	$\varepsilon'' = 2.28$(2.19)
- 60	$\varepsilon' = 6.42$	$\varepsilon' = 4.25$
	$\varepsilon'' = 2.84$	$\varepsilon'' = 1.19$

The values in brackets are those reported by Naokazu Koizumi (Ref 8) for a wavelength of 3.08 cm. The table shows that the real and imaginary parts of the complex permittivity of both alcohols decrease monotonically with temperature in agreement with theoretical predictions. Behaviour of polar liquids in high-frequency fields does not contradict dipole relaxation relationships established earlier for alcohols. There are 1 figure, 1 table and 8 references, 2 of which are Soviet, 1 English and 5 French.

Card 2/3

69450

S/139/60/000/01/024/041
E201/E491

Measurement of the Dielectric Properties of a Polar Liquid as a Function of Temperature Using the Method of a Cylindrical Inhomogeneity in a Waveguide

ASSOCIATION: Kuybyshevskiy industrial'nyy institut imeni V.V.Kuybysheva (Kuybyshev Industrial Institute imeni V.V.Kuybyshev)

SUBMITTED: February 16, 1959

Card 3/3

24,2700

S/139/62/000/001/012/032
E032/E114

AUTHOR: Kurgayev, V.V.

TITLE: Dielectric properties of the intermetallic compound Mg_3Sb_2 with an excess of one of the components

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.1, 1962, 80-83

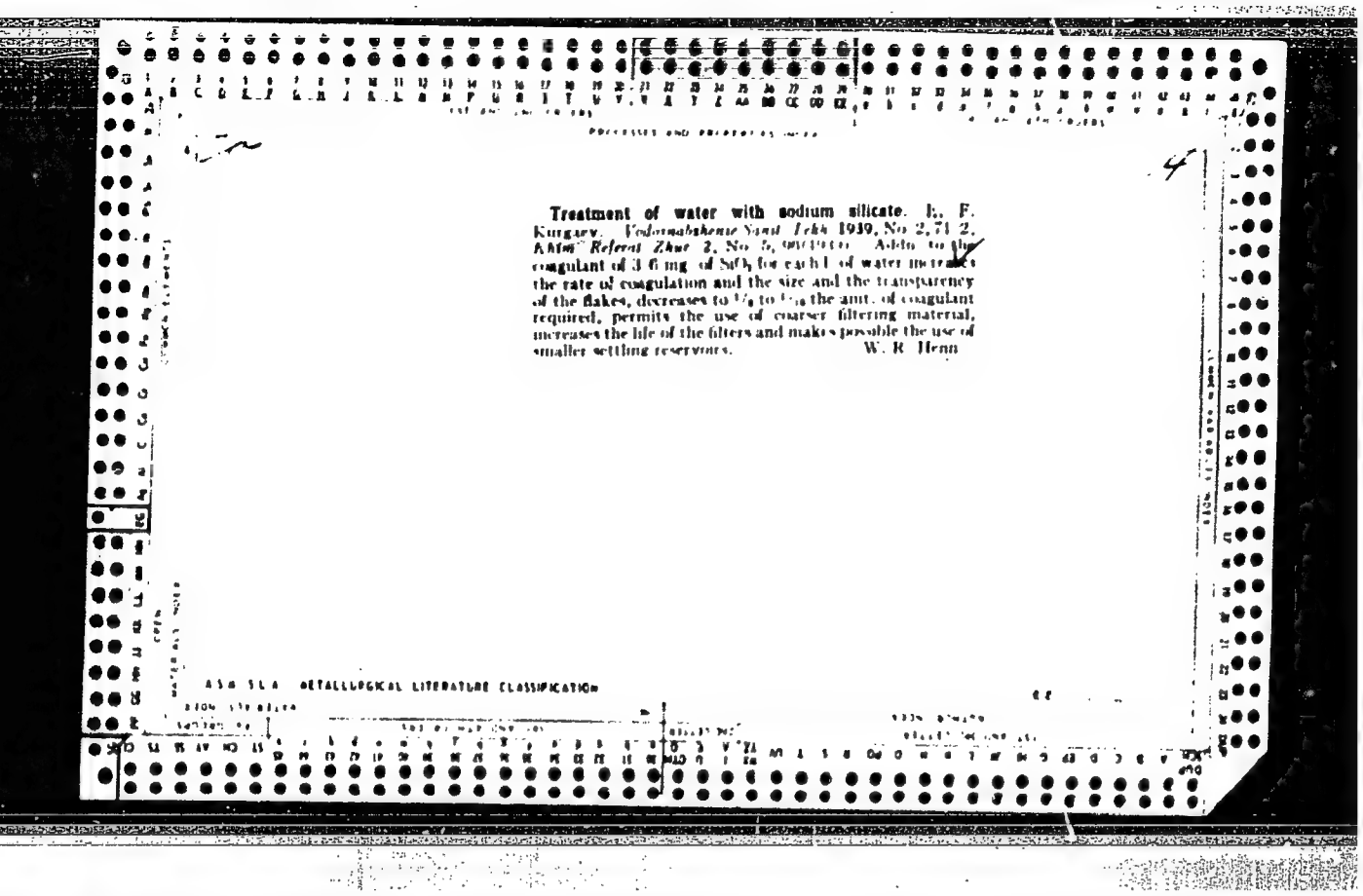
TEXT: Published work on the electrical properties of Mg_3Sb_2 is said to indicate its semiconducting nature. Small departures from the stoichiometric composition are known to lead to an increase in the electrical conductivity and a reduction in the thermal emf. The present paper is concerned with the dielectric properties of Mg-Sb alloys whose composition is not very different from the stoichiometric composition. The complex dielectric constant was measured at a wavelength of 3.2 cm by the waveguide method described by J. Le Bot and S. Le Montagner (Ref.5: Comptes Rendus, v.236, 1953, 469) and Yu.P. Radin (Ref.6: Izvestiya vyzov SSSR, Radiofizika, v.1, 5-6, 1958, 177). The specimens were prepared from magnesium containing 0.010% Cu,

Card 1/2

0.030% Fe and 0.007% Si. The antimony contained 0.005% Cu, 0.024% Ni, 0.050% Zn, 0.003% Fe, 0.013% As and 0.043% S. The alloys were prepared in an argon atmosphere. Magnesium and antimony powders were mixed together, covered by graphite powder and then slowly heated to 1450 °C for 8 to 10 hours. The cooling was also carried out slowly for about 8 hours. The specimens were annealed at 500 °C for 12 hours and the final samples were in the form of cylindrical rods 2 mm in diameter. In addition to the dielectric parameters, measurements were also made of the electrical conductivity. The results are given in the following table. There are 1 figure and 1 table.

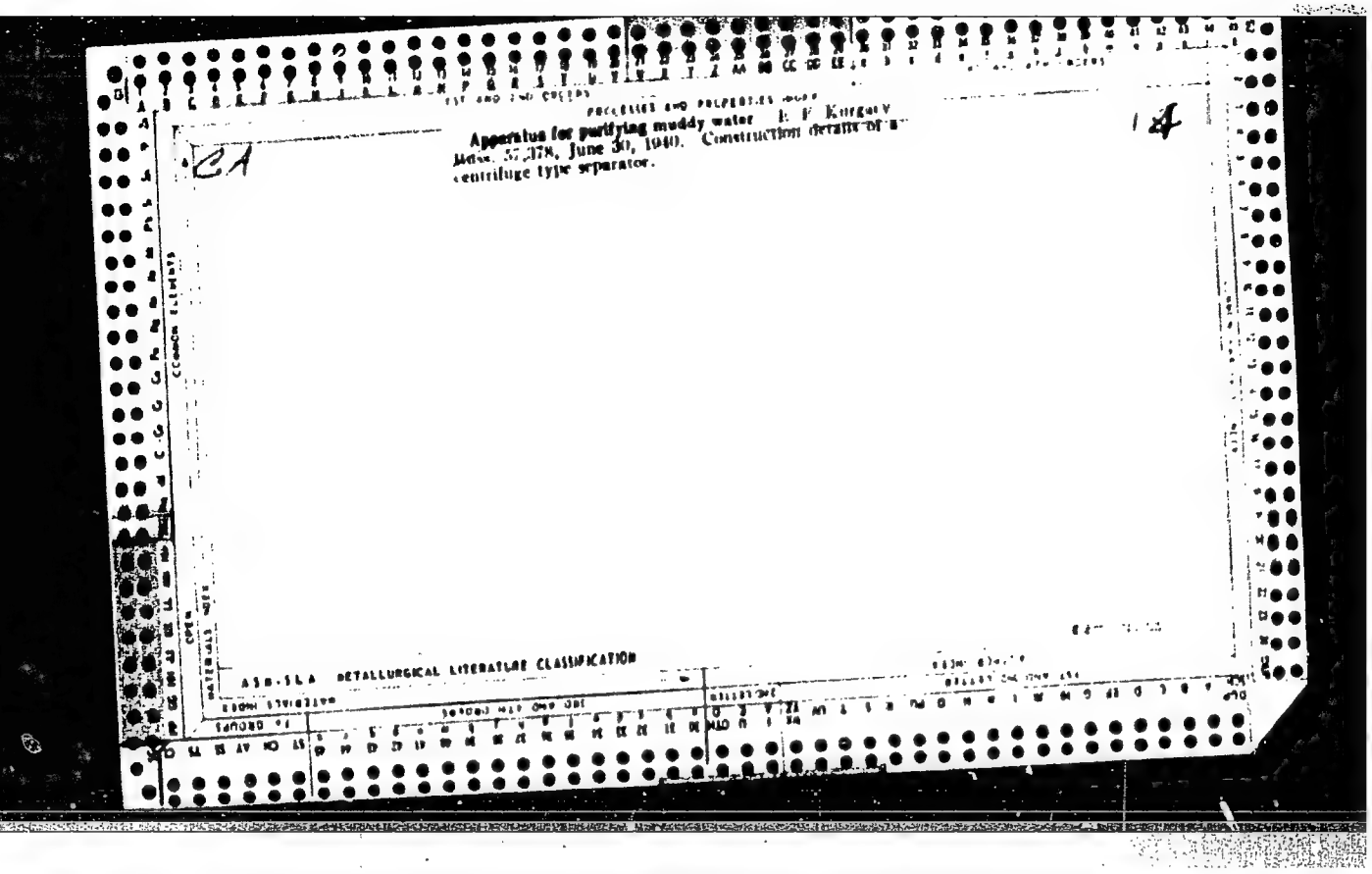
ASSOCIATION: Kuybyshevskiy industrial'nyy institut imeni V.V. Kuybysheva
(Kuybyshev Industrial Institute imeni V.V. Kuybyshev)

SUBMITTED: October 27, 1960



Treatment of water with sodium silicate. K. F. Kurgaev. *Vodosnabzhenie Sanit. Tekh.* 1939, No. 2, 71-2. *Khim. Referat. Zhur.* 2, No. 5, 00[illegible]. Addn. to the coagulant of 3.6 mg. of SiO_2 for each l. of water increases the rate of coagulation and the size and the transparency of the flakes, decreases to ½ to ⅓ the amt. of coagulant required, permits the use of coarser filtering material, increases the life of the filters and makes possible the use of smaller settling reservoirs. W. R. Henn

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

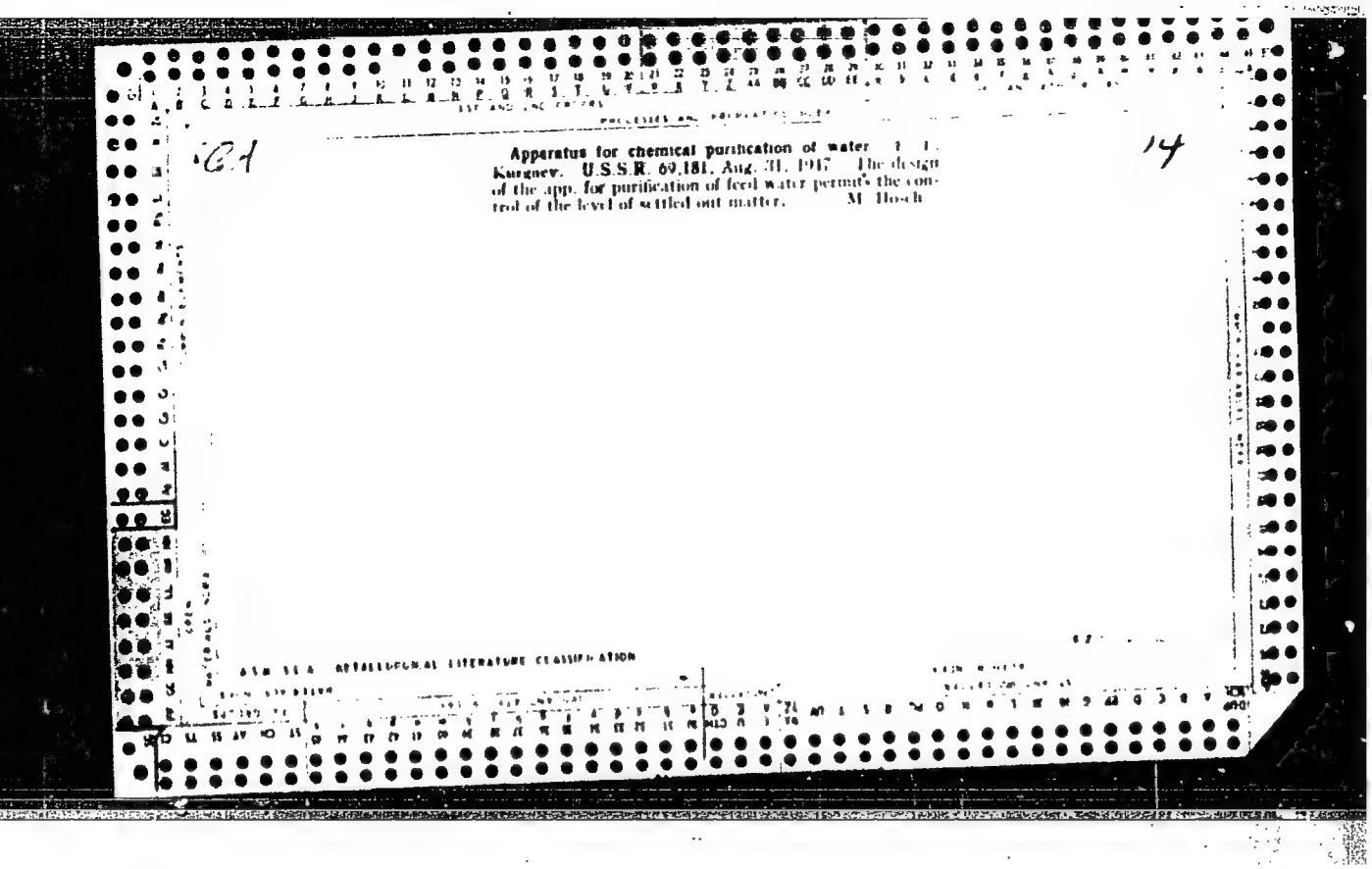


KURLATEV, YE. F.

Technology

How to increase the efficiency of railroad water supply Moskva, Transzheldorizdat, 1945.

Monthly List of Russian Accessions, Library of Congress, August, 1952. Unclass.



C1

Apparatus for chemical purification of water I. I. Kurgnev. U.S.S.R. 69,181, Aug. 31, 1947. The design of the app. for purification of feed water permits the control of the level of settled out matter. M. Hosh

14

KURGAYEV, Ye.F., kandidat tekhnicheskikh nauk

Calculating and regulating the operation of tanks for proportional measuring-out of water softener. Tekh.zhel.dor.6 no.8:8-9 Ag'47. (Railroads--Water supply) (MLRA 8:12)

KURGAYEV, Ye.F., kandidat tekhnicheskikh nauk

"Water service control in railroad transport." E.F.Tebenikhin. Reviewed by E.F.Kurgaev. Tekh.zhel.dor. 7 no.1:32 Ja '48. (MLRA 8:11)

(Railroads--Water supply) (Tebenikhin, Ye.F.)

KURGAYEV, Ye.F.

Study of structural suspensions. Koll. zhur. 19 no.1:72-77 Ja-F '57.
(MLRA 10:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta, Moskva.

(Suspensions)

AUTHOR: Kurgayev, Ye. F. (Moscow) SOV/24-58-5-28/31

TITLE: Investigation of the Constrained Settling of Solid Particles in the Case of Low Reynolds Numbers (Issledovaniye stesnennogo osazhdeniya tverdykh chastits pri malykh chislakh Reynol'dsa)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 5, pp 137-141 (USSR)

ABSTRACT: In a granular layer which is in a state of suspension (dynamic equilibrium) in a stream of water, the following phenomenon is observed: the speed of settling of the solid particles forming the layer decreases with increasing concentration and the particles themselves are in a state of continuous chaotic motion or circulation. The aim of the author was to investigate for low Reynolds numbers of the particles certain problems of the nature and the mechanism of this phenomenon, namely, what is the regime and the structure of the water flow in the suspended granular layer, what forces bring about a drop in the speed of the "constrained" settling of the particles in the layer and what is the relation between the circulation of the individual solid particles and

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Investigation of the Constrained Settling of Solid Particles in the Case of Low Reynolds Numbers

what is the influence of this circulation on the parameters of the suspended layer and the water flow in it. The experiments were carried out with wofatite (sulphated resin) with average equivalent particle diameters of 0.17, 0.22, 0.29 and 0.37 mm. The layers consisting of these grains were brought into the suspended state by a stream of water with various speeds of flow inside a glass tube of 37 mm dia., 1.5 m height; for each particle size the experiments were carried out at water temperatures of 4 to 22°C, whereby the Reynolds numbers of the particles varied between 0.15 and 4.8. The circulation of particles was studied in presence and in absence of particles in the suspended layer; the second condition was complied with in a layer having an upward motion and a constant concentration and was achieved by feeding into the bottom of the layer a mixture of water and solid particles. The thus obtained experimental relations between the volume concentration K_o of the solid particles and the ratio of the speed of movement of the water above the layer V_o and the speed of the free precipitation of the

Investigation of the Constrained Settling of Solid Particles in the Case of Low Reynolds Numbers

particles V_p are graphed in Fig.1. It can be seen that for an upward movement of the layer, the speed of the constrained settling of the solid particles in the case of absence of circulation of the solid particles is higher than in the case of the layer being under conditions of dynamic equilibrium. Consequently, the circulation of the particles produces an additional resistance to their settling. In Fig.2 the oscillograms are reproduced of the speeds measured at the heights of 400 and 8 mm respectively above the layer and directly in the layer; these show that in the layer and directly above it the regime of water flow is turbulent, whilst at a considerable distance from the layer it is laminary. It is concluded that in the layer of the suspended grains, speed pulsations and a turbulent regime of movement of these components will occur due to frequent and sharp changes of the shape and the cross section of the local components of the flow. These pulsations bring about changes in the amount of motion between larger groups of

Card 3/4 molecules, which results in an increase of the apparent

Investigation of the Constrained Settling of Solid Particles in the Case of Low Reynolds Numbers

viscosity and in an increase of the resistance to settling of the particles. A relation is derived, Eq.(15), which represents the relation between the changes of a as a function of K_0 (a = coefficient taking into consideration the ratio of the real amount of movement to that calculated from the average speed and reflecting the non-uniformity of the speed distribution along the live cross section of the flow). This relation is compared with experimental data. For certain values a full analogy is obtained between the derived relation and the Einstein formula. The relations derived in this paper can be applied in calculating apparatus used in chemical processes and for ore beneficiation.
There are 4 figures, 1 table and 15 references, 10 of which are Soviet, 3 English, 2 German.

SUBMITTED: January 25, 1957

KURGAYEV, Ye.F.

Determining the parameters of water flow at low speeds. Inzh.-fiz. zhur. no.10:120-122 O '58. (MIRA 11:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta, g. Moskva.
(Hydrodynamics)

AUTHOR: Kurgayev, Yu. F. (Cand. Tech. Sci.) SOV/96-58-12-3/18

TITLE: The mechanism of deposit formation during the lime treatment of water (O mekhanizme obrazovaniya osadka pri izvestkovanii vody)

PERIODICAL: Teploenergetika, 1958, No.12, pp. 18-22 (USSR)

ABSTRACT: Knowledge of the mechanism of deposit formation during the softening of water with lime can be used to influence the properties of the deposits and so increase the effectiveness of the treatment. Deposit formation was studied by special tests in which water was softened in model clarifiers under normal hydraulic conditions. The criteria of quality of softening were based on obtaining different ratios of calcium carbonate to magnesium hydroxide in the deposit. Pure deposits of the latter were obtained by treating the water with caustic soda, and to obtain deposits with a preponderance of calcium carbonate the water was treated with lime. The reagent solutions and the softened water contained no mechanical impurities and were practically free from organic substances. The mechanical properties of the deposits were determined by procedures previously published by the author, in literature reference 1. Photo-micrographs of deposits were made with magnifications of 6000 and 400. The properties of the deposits are related to the ratio of calcium carbonate to magnesium hydroxide by the data in Table 1. When the magnesium hydroxide content is high,

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the mechanical strength of the deposits is low. The reasons for this could be found by microscopic examination. Calcium carbonate deposits, illustrated photographically in Fig.1., show a clear crystalline structure with aggregation of individual particles. This is typical of condensation-crystallisation structure formation. The modification to the structure that occurs with a 25% concentration of magnesium hydroxide is similarly illustrated in Fig.2., and the corresponding change for 50% of magnesium hydroxide in Fig.3. The latter is of amorphous structure and forms on the surfaces of the calcium carbonate crystals, hindering their combination and growth. The formation of deposits of calcium carbonate and magnesium hydroxide is described and is shown to be a complicated process; in some respects the effect of the formation of calcium carbonate crystals is similar to that resulting from the addition of surface-active substances. The density of calcium carbonate deposits may range from 1.01 - 1.43 g/ml, the lower values being obtained when there is much less carbonate than magnesium hydroxide. Calcium carbonate with a density of 2.5 - 2.7 g/ml can be formed when the water is moving quickly and contains a considerable quantity of solid contaminated substance on which the calcium carbonate can crystallise. The physical properties of aluminium hydroxide and iron hydroxide used as coagulants are given in Table.2.

These materials increase the linkage forces and coefficient of adhesion of the structure and so increase the size of particles and the rate of precipitation. Special conditions of precipitate formation that are sometimes observed in water-treating plants are explained in terms of the mechanisms of crystallisation described in the article. Conditions that promote satisfactory operation of water-softening plant are then stated. Firstly, the water and reagents should be mixed in a contact medium consisting of calcium carborate and magnesium hydroxide in order to create favourable conditions for catalysis, sorption and adhesion with respect to both components of the newly formed precipitate. Secondly, the hydraulic conditions should be such that the magnesium hydroxide structure is not destroyed. Thirdly, the best rate of flow of water should be determined experimentally. Finally, even if considerable care is taken, calcium carbonate crystals may form and be deposited in the lower part of the

The mechanism of deposit formation during the lime treatment of water. SOV/96-58-12-3/18

clarifier, and since this has various undesirable consequences these deposits should be removed periodically from the clarifiers. Data are given that show the effectiveness of this measure. There are 3 figures, 2 tables and 10 [illegible], 8 of which are Soviet.

ASSOCIATION: All-Union Scientific Research Institute of Railway Transport (VNII Zheleznodorozhnogo Transporta)

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10(4) SOV/170-59-4-1/20

AUTHOR: Kurgayev, Ye.F.

TITLE: On Diffusion in a Fluidized Bed (O diffuzii v kipyashchem sloye)

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 4, pp 3-7 (USSR)

ABSTRACT: An intensive circulation of solid particles and fluctuations of their concentration occur in a fluidized bed. The cause of circulation is pulsation of velocities and pressures in the bed resulting from the frequent and abrupt changes in the cross section of the liquid flux circumfluent the solid particles. The All-Union Scientific Research Institute of Railroad Transport carried out experimental investigations of this phenomenon. A special device, described in the article, was employed in which the fluidized bed of granular material, brought into a suspended state by the ascending water jet, was created. The experiments have shown that solid particles flow continuously from the section in which the fluidized bed was created into another section, if the aperture separating them is opened. The motion of the particles proceeds in the absence of a positive gradient of hydrostatic pressure. It

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is assumed that this motion occurs due to the presence of a concentration gradient and a difference in hydrodynamical parameters of the media in the fluidized bed and beyond its borders. Thus it represents a phenomenon of diffusion. It was established that the velocity of the motion of particles from the fluidized bed does not depend on their geometrical dimensions, the height of the bed and on the water temperature, but is determined by two parameters: the volume concentration of the particles and their density. The results of the experiments are represented in graphical form and show that the diffusion rate of the solid particles rises with an increase in their density and concentration up to a certain maximum and then falls down to zero at K_o (volume concentration) when the bed goes over from the fluidized state into a stationary one. A certain similarity between diffusion and hydraulic resistance in the fluidized bed was found which resembles the similarity of these quantities in turbulent transfer. The apparent viscosity and apparent density of the two-phase mixture are higher than those of a free single-phase flow. The author assumes that the apparent density of the two-phase mixture in the fluidized bed is a consequence of diffusion, fluctuations of concentra-

tions and pulsations of velocities, which is analogous to Einstein - Smoluchowski's hypothesis on fluctuations in the density of a viscous liquid.
There are 2 graphs, 1 diagram and 7 references, 6 of which are Soviet and 1 German.

ASSOCIATION: Institut zheleznodorozhnogo transporta (Institute of Railroad Transport), Moscow

KURGAYEV, Ye.F.

Thickening and dewatering of clarifier sludge. Vod.i san.tekh. no.1:23-27 Ja '60. (MIRA 13:4)
(Water--Purification)

KURGAYEV, Ye. F.

Doc Tech Sci - (diss) "Basic problems of the theory and calculations of sedimentation tanks." Moscow-Leningrad, 1961. 29 pp; with illustrations; (Academy of Economy imeni K. D. Pamfilov); 150 copies; free; list of author's works at end of text (19 entries); (KL, 6-61 sup, 211)

KURGAYEV, Yevgeniy Fedorovich, doktor tekhn. nauk; SHERSHUKOVA, M.A., red. izd-va; KOMAROVSKAYA, L.A., tekhn. red.

[Principles of the theory and design of clarifiers]Osnovy teorii i rascheta osvetlitelei. Moskva, Gosstroiizdat, 1962. 163 p. (MIRA 15:10)
(Water--Purification)

KURGELAIDZE, G.M.

Forms of the snow surface produced by the effect of winds and temperature; Antarctica. Soob. AN Gruz. SSR 28 no.2:173-180 F '62. (MIRA 15:3)

1. AN GruzSSR, Institut geografii imeni Vakhushti, Tbilisi. Predstavleno akademikom A.N.Dzhavakhishvili.
(Antarctic regions--Snow)

KURGIN, S.

Regional planning and organization of land use within the farm. Sel'.stroi. 15 no.7:20 Jl '60.
(MIRA 13:8)

1. Direktor instituta "Rosgiprosovkhozstroy."
(Regional planning) (Collective farms)
(State farms)

KURGIN, S.; KONDUKHOV, A., arkhitektor; KOROBOV, S., agronom

New projects involving the planning of Poshekhon'ye Province.
Sel'.stroi. 15 no.9:15-16 S '60. (MIRA 13:9)

1. Direktor instituta "Rosgiprosovkhozstroy" (for Kurgin).
(Poshekhon'ye-Volodarsk Province--Regional planning)

AUTHOR: Kurgin, Yu.M. SOV/19-58-6-70/685

TITLE: A Device for Reloading Fabric on to the Rewinding Rollers, e.g., of Finishing Textile Machines (Prisposobleniye dlya perezapravki tkani na peremotochnykh rolikakh, naprimer, otdelochnykh tekstil'nykh mashin)

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 6, p 19 (USSR)

ABSTRACT: Class 8f, 7_{01}. Nr 113604 (583947 of 3 Oct 1957). Submitted to the Committee of Inventions and Discoveries at the Ministers Council of USSR. A device making it possible to simultaneously release one end of the fabric and load the other, designed in the form of a Π-shaped spring-loaded plate pressing the fabric on to the surface of the roller, and moved by radial guides attached to the ends of the roller.

Card 1/1

KORNIYENKO, A.M.; SHTEL'MAKHOV, M.S.; GEYLER, Z.Sh.; BERESNEV, V.A.; KOTLIK, S.B.; GORFINSKIY, Kh.M.; ZEL'DIN, Yu.R.; KURGIN, Yu.M.; BELYAYEV, V.G.; ZAK, P.S.; ZAYTSEV, A.A.; LI, A.M.; SKVORTSOV, L.N.; LUTTS, R.R.; KHVINGIYA, M.V.; NINOSHVILI, B.I.; SEMENCHENKO, D.I.; SUKHANOV, V.B.

Soviet inventions in mechanical engineering. Vest.mashinostr. 45 no.11:87-88 N '65. (MIRA 18:12)

KON'KOV, Aleksey Ivanovich; ZEL'DIN, Yuliy Rafailovich; KURGIN, Yuriy Mikhaylovich; KOZLOVSKIY, Sergey Dmitriyevich; KON'KOVA, Mayya Borisovna; RUDAKOV, Konstantin Dmitriyevich; SELEN'KIY, L.I., retsenzent; ABRAMOV, S.A., retsenzent; ZELENSKAYA, G.G., retsenzent; SIBIRTSEV, S.L., retsenzent; VENGITSKAYA, Ye.M., red.

[Equipment for the finishing operations in the textile industry] Oborudovanie otdelochnogo proizvodstva tekstil'noi promyshlennosti. Moskva, Legkaia industriia, 1964. 417 p. (MIRA 18:1)

DERYAGIN, B.V.; KURGIN, Yu.S.

Effect of periodic pressure fluctuations on phase equilibrium. Part 3: Liquid - air-vapor mixture with flat interfacial boundary. Koll.zhur. 27 no.3:349-356 My-Je '65.

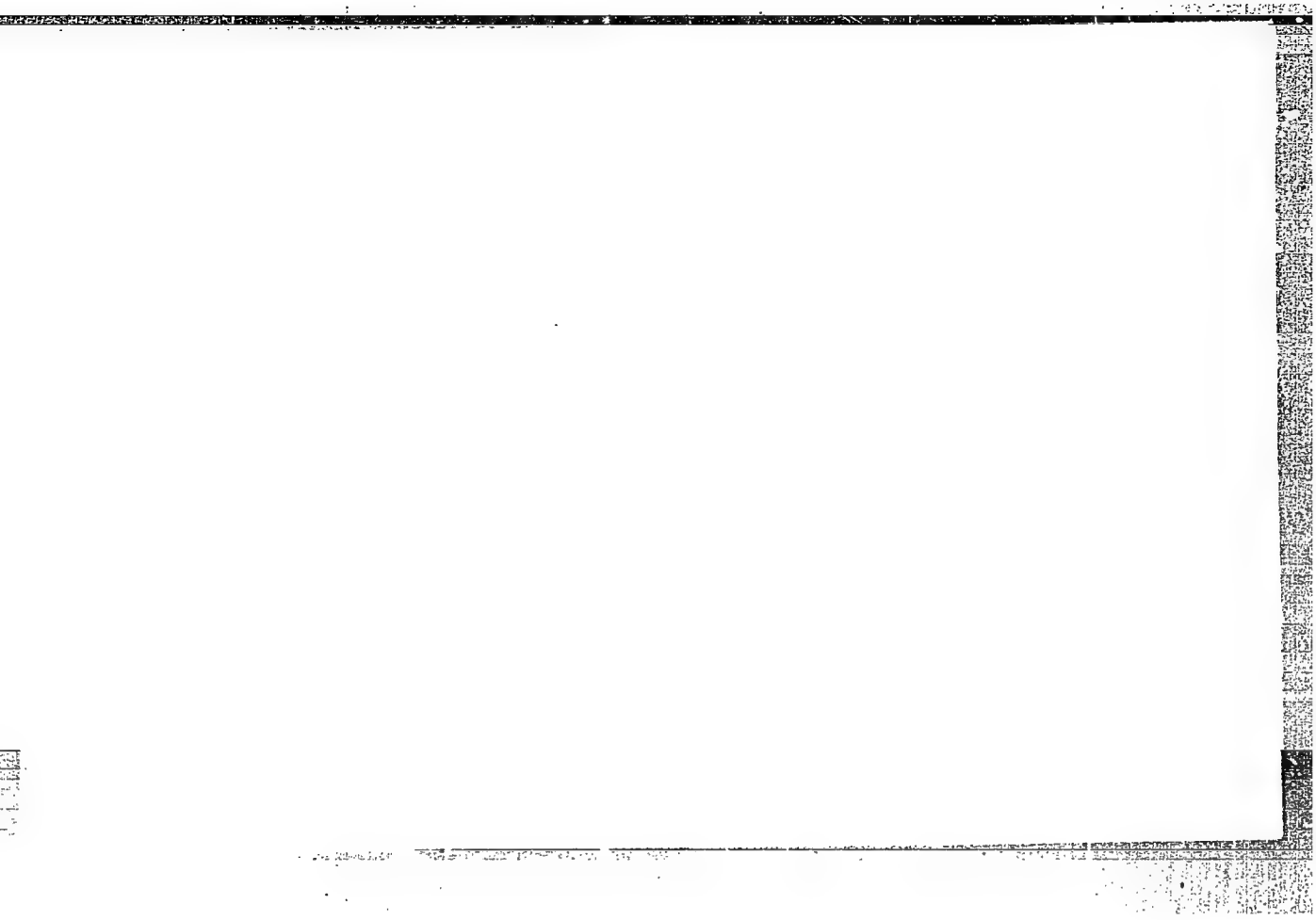
(MIRA 18:12)

1. Institut fizicheskoy khimii AN SSSR, Moskva. Submitted Nov. 29, 1963.

DERYAGIN, B.V.; KURGIN, Yu.S.

Effect of periodic pressure oscillations on phase equilibrium. Part 1: Liquid - vapor, a plane interface. Koll.zhur. 26 no.1: 28-35 Ja-F '64. (MIRA 17:4)

1. Institut fizicheskoy khimii AN SSSR, Moskva.



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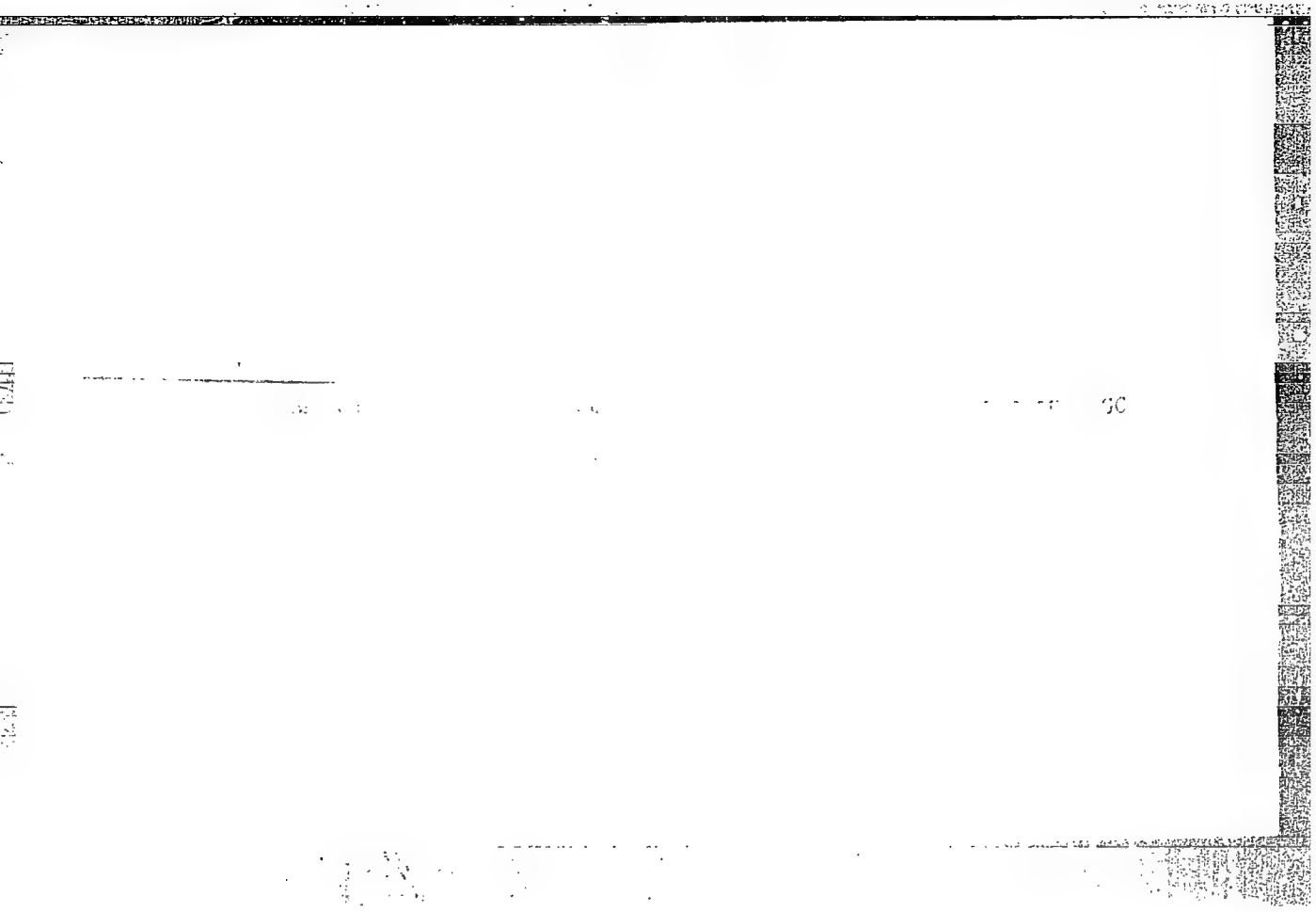

s/0020/64/155/003/0644/0646

ACCESSION NR: AP4025113

AUTHOR: Deryagin, B. V. (Corresponding member); Kurgin, Yu. S.

TITLE: The unsteady evaporation of a liquid drop covered with an adsorption layer

SOURCE: AN SSSR. Doklady*, v. 155, no. 3, 1964, 644-646

TOPIC TAGS: monolayer, macroscopic film, liquid molecule, molecular diffusion, unsteady evaporation, drop evaporation, desorption, molecule transfer, adsorption equilibrium

ABSTRACT: A previous error in the treatment of the unsteady evaporation of a liquid drop through a monolayer led to an erroneous formula for the rate of non-steady evaporation (B. V. Deryagin et al., DAN, 135, (1960) 1717), and encouraged this report on the mentioned evaporation. Discussed in this connection is the unsteady evaporation of a liquid drop with a radius a covered with a monolayer of foreign matter and stationary in relation to an infinite gas medium. The assumption is made that the formation of an adsorption equilibrium is based on the formation of an adsorptive vapor layer on the surface of the monolayer of foreign matter. It is believed that the effect of the monolayer on evaporation may be the

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ACCESSION NR: AP4025113

result of the concentration effectiveness of evaporation reduced by a magnitude proportional to the resulting flow of molecules through the monolayer. This interperetation is somewhat analogous to Ohm's law. The proportionality factor can be treated as the resistance of the monolayer to evaporation, and the incomplete "adhesion" of the vapor molecules to the monolayer can be attributed to diffusion air resistance. Orig. art. has: 13 formulas.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry, AN SSSR)

SUBMITTED: 02Jan64 DATE ACQ: 17Apr64 ENCL: 00

SUB CODE: CH NO REF SOV: 002 OTHER: 000

Card 2/2

87409

S/020/60/135/006/025/037
B004/B056

11.7410

AUTHORS: Deryagin, B. V., Corresponding Member AS USSR, Bakanov, S P., and Kurgin, Yu. S.

TITLE: The Influence of Monomolecular Layers Upon the Evaporation of Drops

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 6, pp. 1417 - 1420

TEXT: The authors develop a theory of the influence of monomolecular layers upon the evaporation of drops, which takes two effects into account: 1) the quasi-steady evaporation of a drop covered by an insoluble film of a different substance, and 2) the nonsteady evaporation of a drop covered by such a film. For 1) the following is taken into account: a) the steady diffusion of liquid molecules through the film, b) the steady diffusion of liquid molecules from the film into the air. The following relations are written for these processes: $C_1 = A_1/r + B_1$; $a < r < a + \delta$; $C_2 = A_2/r + B_2$; $r > a + \delta + \lambda$. C_1 denotes the number of liquid molecules

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The Influence of Monomolecular Layers Upon the Evaporation of Drops

S/020/60/135/006/025/037
B004/B056

per cm^3 of film, C_2 the concentration of vapor in the air, a the radius of the drop, δ the thickness of the film, λ the thickness of the layer of air immediately adjoining the film. A_1, A_2, B_1, B_2 are coefficients. On the basis of the boundary conditions for diffusion on the boundaries $r = a + \delta$ and $r = a + \delta + \lambda$ the following relation is derived for a film ($\delta \ll a$): $-dM/dt = 4\pi a^2 (C_o - C_\infty) / \left[C_o \delta / C_p D_1 + 1/(\alpha \bar{v}/4) + a^2/(a+\lambda) D_2 \right]$ (10). dM/dt is the change in mass of the drop per unit time, C_o is the saturation concentration of vapor at the temperature of the drop, C_p is the concentration of the liquid in the drop, C_∞ is the concentration of vapor at an infinite distance from the drop, α is the permeability coefficient of the film, D_1 is the diffusion coefficient of the liquid in the film, D_2 is the diffusion coefficient of vapor in air, and $\bar{v}$ is the average velocity of the vapor molecules. For the case $C_o \delta / C_p D_1 + 1/(\alpha \bar{v}/4) < 1/(\alpha_{H_2O} \bar{v}/4)$, where $\alpha_{H_2O} = 0.034$ is the condensation coefficient of water, there results

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87409

The Influence of Monomolecular Layers Upon the Evaporation of Drops

S/020/60/135/006/025/037
B004/B056

an acceleration of evaporation by the presence of the monomolecular layer This case was experimentally observed. For nonsteady evaporation, the authors proceed from the equation $-dM/dt = m4\pi(a+\lambda)^2(-D_2\partial C/\partial r|_{r=a+\lambda})$, and derive a very voluminous equation. For the initial evaporation rate, $J|_{t=0} = J_o\left[1 + (\bar{v}/4)a^2/D_2(a+\lambda)\right]$ is given. J_o corresponds to the quasi-steady state of equation (10). On the basis of the experimental values of J_o and $J_{t=0}$, the parameters α and δ/CD_1 may be calculated for each film. There are 7 references: 4 Soviet and 3 US.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: July 14, 1960

Card 3/3

AMELIN, A.G.; YASHKE, Ye.V.; KURGIN, Yu.S.

Temperature of a drop-let in supersaturated vapors. Koll.zhur. 23 no.6:652-657 N-D '61. (MIRA 14:12)

1. Nauchno-issledovatel'skiy institut po udobreniyam i insektofungisidam imeni prof. Ya.V.Samoylova.
(Vapors) (Drops)

KURGIN, Yu.S.; DERYAGIN, B.V.

Effect of periodic pressure fluctuations on phase equilibrium. Part 2: Liquid - vapor - drop phase equilibrium; experimental applications. Koll.zhur. 26 no.2:215-223 Mr-Ap '64. (MIRA 17:4)

1. Institut fizicheskoy khimii AN SSSR i Laboratoriya poverkhnostnykh yavleniy, Moskva.

5(4)

AUTHOR: Kurgintsev, A. N. SOV/76-33-6-40/44

TITLE: Distribution of Isomorphic Impurities Between the Solid and Liquid Phases During the Growth of Crystals by the Method of Extraction and Zone Recrystallization (Raspredeleniye izomorfnoy primesi mezhdu tverdoy i zhidkoy fazami pri vyrashchivanii kristallov metodom vytyagivaniya i zonnoy perekristallizatsii)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 6, pp 1422 - 1429 (USSR)

ABSTRACT: In the papers (Refs 1, 2), a mathematical theory for the distribution of impurities along the crystal obtained by the method of extraction or zone recrystallization is put forward. This theory is based on some presuppositions: 1) There is no diffusion in the solid phase separated from the melt. 2) The diffusion in the liquid phase proceeds unhampered. 3) The concentration of impurities is (with respect to the basic substance in the solid phase) directly proportional to the concentration of impurities in the liquid phase. In the present case, it is stated that the distribution of isomorphic impurities between the two phases should be expressed by the

Card 1/3

Distribution of Isomorphic Impurities Between the Solid SOV/76-33-6-40/44
and Liquid Phases During the Growth of Crystals by the Method of Extraction
and Zone Recrystallization

coefficient λ of the equations

$$\lambda = \frac{N_1' N_2''}{N_1'' N_2'} \quad (4) \text{ and } \lambda = \frac{c_1' c_2''}{c_1'' c_2'} \quad (6),$$

respectively (N = (1) molar fraction of the impurity and (2) of the basic substance in the solid phase (') and in the liquid phase ("). Starting from these equations, the equations for the distribution of isomorphic impurities between the solid and liquid phases in crystallizations by the method of extraction and zone recrystallization are derived. A schematic representation of the metal purification by means of the zone recrystallization is given, and a method of determining the distribution of impurities along the crystal after some passages through the melting zone of the metal is worked out. The final equation obtained (25) represents the distribution of impurities along the crystal as a factor of the number of passages. There are 4 Soviet references.

Card 2/3

Distribution of Isomorphic Impurities Between the Solid and Liquid Phases During the Growth of Crystals by the Method of Extraction and Zone Recrystallization

SOV/76-33-6-40/44

ASSOCIATION: Dal'nevostochnyy filial Akademii nauk SSSR, Vladivostok (Far East Branch of the Academy of Sciences of the USSR, Vladivostok)

SUBMITTED: December 28, 1957

Card 3/3

KURGINYAN, M.; TER-OGANYAN, M.

Develop the production of tuff stones of regular-shape. Prom. Arm. 6 no.12:14-17 D '63. (MIRA 17:2)

KURGINYAN, M.

Mechanization of the production of reinforced concrete articles. Prom. Arm. 6 no.6:31-33 Je '63. (MIRA 16:8)

(Reinforced concrete construction)

DZHANPOLADYAN, L.; SIMONOV, M.; AGADZHANYAN, G., akademik; MANUKYAN, Kh.; MAMIKONYAN, K.; GABOYAN, M.; KURGINYAN, M., nauchnyy sotrudnik

Scientists and public workers train replacements. NTO 5 no.7: 10-19 Jl '63. (MIRA 16:8)

1. Predsedatel' Armyanskogo respublikanskogo soveta nauchno-tekhnicheskikh obshchestv (for Dzhanpoladyan). 2. Predsedatel' byuro po promyshlennosti komiteta obshchestvennoy aspirantury, chlen-korrespondent AN Armyanskoy SSR (for Simonov). 3. Predsedatel' byuro po sel'skomu khozyaystvu komiteta obshchestvennoy aspirantury i AN Armyanskoy SSR (for Agadzhanyan). 4. Direktor sovkhoza "Masis" (for Manukyan). 5. Nachal'nik tsekha Yerevanskogo khrompikovogo zavoda (for Mamikonyan). 6. Direktor leninakanskogo zavoda "Strommashina" (for Gaboyan). 7. Institut stroymaterialov i sooruzheniy (for Kurginyan).
(Armenia—Technical education)

KURGINYAN, M., inzh.

Separation of natural light fillers. Prom.Arm. 6 no.1:57-60 Ja '63. (MIRA 16:4)

(Armenia--Ashes, tuffs, etc.)

KURGINYAN, F.G.

Study of sunflower grown for ensilage in the Lori Plateau [in Armenian with summary in Russian]. Izv.AN Arm.SSR.Biol.i sel'khoz. nauki 6 no.10:33-38 '53. (MLRA 9:8)
(Lori Steppe--Sunflowers)

M

USSR/Cultivated Plants. Grains.

Abs Jour: Ref Zhur-Biol., No 5, 1958, 20287.

Author : R.G. Kurginyan.
Inst : The Armenian Scientific Research Institute for Animal Husbandry and Veterinary Medicine.
Title : An Experiment to Obtain an Intervarietal Corn Hybrid. (Opyt polucheniya mezhsortovogo gibrida kukuruzy).

Orig Pub: Byul. nauchno-tekhn. inform. Arm. n.-i. in-ta zhivotnovodstva i veterinarii, 1957, No 1, 29-31.

Abstract: No abstract.

Card : 1/1

LUR'YE, I.; MELKONYAN, V.; SUKIASYAN, A.; KURGINYAN, S.

Organization of the production of steel and alloys for the electric industries in Armenia. Prom.Arm. 5 no.3:10-14 Mr '62. (MIRA 15:4)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I.R.Bardina (for Lur'ye). 2. Nauchno-issledovatel'skiy gornometallurgicheskiy institut Sovnarkhoza Armyanskoy SSR (for Kurginyan).
(Armenia--Steel industry)

L 47050-66 EWT(l)/EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) JD/AT/WH

ACC NR: AP6020953 (N) SOURCE CODE: UR/0054/66/000/002/0125/0129

AUTHOR: Kurglov, V. I.; Bobrov, A. I.

ORG: none

TITLE: Effect of gallium, indium, and thallium on the spectral distribution of the photoconductive effect of vitreous arsenic selenide

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 2, 1966, 125-129

TOPIC TAGS: gallium, indium, thallium, arsenic compound, selenide, photoconductivity, internal photoeffect

ABSTRACT: Measurements of the spectral distribution of photoconductivity in vitreous As_2Se_3 samples doped with Ga, In, and Tl were carried out with direct current, compensation of dark current in a U1-2 instrument, and a UM-2 monochromator, at the exit of which the amount of quanta was kept constant for all the working wavelengths by adjusting the incandescence of the lamp. The introduction of Ga, In, and Tl was found to shift the red photoconductivity limit toward longer waves; this effect is most pronounced in the case of Tl. By penetrating into vitreous As_2Se_3 in much greater quantity than either Ga or In, Tl causes a substantial increase of the region of photosensitivity. Inertial photoconductivity is observed at the edge of the fundamental absorp-

Card 1/2 UDC: 541.67

L 47050-66
ACC NR: AP6020953

tion band, and inertialess photoconductivity is observed within the absorption band. Orig. art. has: 4 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 01Nov65/ ORIG REF: 010/ OTH REF: 001

Card 2/2 vlr

KURGUL'TSEVA, L. I.

USSR / Cultivated Plants. Plants for Technical Use. Oil Plants. Sugar Plants. H

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34721

Author : Kurgul'tseva, L. I.
Inst : AS UzSSR
Title : Effect of Soil Moisture on the Speed of Water Uptake by the Root System of Cotton Plants.

Orig Pub : V sb.: Vopr. fiziolog. khlopchatnika i trav. Vyp. I. Tashkent, AN UzSSR, 1957, 33-46.

Abstract : The speed of water uptake by the cells of the root system of the cotton plant of the variety 108-F, with varying irrigation budgets, has been studied by the Institute for Agriculture of the Academy of Sciences of the SSR by means of the vegetation method. Volume of the roots was determined by means of dipping them into a measuring drum. Total active surface of roots

Card 1/2

USSR / Cultivated Plants. Plants for Technical Use. Oil Plants. Sugar Plants. H

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34721

was ascertained by the method of Sabinin-Kolosov. The speed of water intake and the permeability of the cells of the roots were computed according to special formulas. Thus, it was found that the permeability of the root cells is very small. It is highest during the budding stage, and then decreases during the period of blooming, to decline sharply during the ripening stage. The intake of water by the root cells and the permeability of the cells was higher in the presence of a soil humidity of 65%, as compared with a soil humidity of only 40%. As a result of such higher humidity, the plants developed better and produced a higher yield of cotton wool. -- Zaimov.

Card 2/2

I-1

USSR / Plant Physiology. Respiration and Metabolism.

Abs Jour : Ref Zhur - Biol., No 22, 1958, No 99900

Author : Kurgul'tsova, L. I.
Inst : Academy of Sciences, Uzbekistan SSR
Title : The Participation of Sugars in the Biological Synthesis of Cellulose

Orig Pub : "Materials of the Inter-Republic Conference on the Coordination of Scientific Research Work on Cotton Growing", AS Uzbekistan SSR, Tashkent, 1957, pp 147-149

Abstract : The method of chromatography on paper served to detect, besides fructose, also saccharose in samples of the fiber of the variety 108-F of 25-30-day cotton with 11-12 sympodiums, collected on 10 October at 0900, 1200, 1500 and 1800 hours, respectively, and fixated with boiling 80% alcohol, and to make a similar finding in the juice of the fiber without fixation. It is assumed that there exist two ways of

Card 1/2

USSR / Plant Physiology. Respiration and Metabolism.

Abs Jour : Ref Zhur - Biol., No 22, 1958, No 99900

cellulose synthesis: from the phosphoric esters of sugars, and directly from the active forms of saccharose-type sugars. B. Ya. Kretsova.

Card 2/2

USMANOV, Kh.U.; KURGUL'TSEVA, L.I.

Changes in the quality of sugars in fiber in proportion to the accumulation of cellulose. Dokl.AN Uz.SSR no.8:30-33 '59.
(MIRA 12:11)

1. Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).
(Cotton)

KURGUL'TSEVA, L.I.

Effect of aeration on the rate of absorption of water into the cotton plant root system. Dokl.AN Uz.SSR no.11:48-51 '59.
(MIRA 13:4)

1. Institut genetiki i fiziologii rasteniy AN UzSSR. Predstavleno akad. AN UzSSR S.S.Kanashom.
(Cotton) (Plants--Absorption of water)

KURGUL'TSEVA, L.I.

Effect of soil salinity on the rate of water absorption by the root system of the cotton plant. Uzb. biol. zhur. no. 6:32-38 '60.
(MIRA 14:2)

1. Institut genetiki i fiziologii rasteniy AN UzSSR.
(COTTON--WATER REQUIREMENTS)
(PLANTS, EFFECT OF SALTS ON)

KURGUL'TSEVA, L.I.

Dynamics of the storage of sugars in the cotton fiber during the period of vegetation. Dokl. AN Uz.SSR. 21 no.3:28-31 '64. (MIRA 19:1)

1. Institut khimii polimerov AN UzSSR. Submitted September 9, 1961.

KURGUZNIKOVA, L.V.

Participation of a science and technology library in an inter-plant school. Opyt rab. po tekh. inform. i prop. no.1:35-36 '63. (MIRA 16:12)

SOBOL', S.I.; NELEN', I.M.; SPIRIDONOVA, V.I.; BERLIN, Z.L; GORYACHKIN, V.I.; TARAKANOV, B.M.; SHKURSKIY, V.D.; Prinimali uchastiye: FREYMAN, A.K., inzh.; BRUK, B.M., inzh.; CHEBOTKEVICH, G.V., inzh.; OSPIN, V.G., inzh.; ALEKSANDROVA, N.N., laborant; SALTYKOV, I.B., laborant; TELKOVA, Ye.I., laborantka; TEPLYAKOV, Yu.M., laborant; GAVRILENKO, A.P., slesar'; KURGUZOV, A.S., elektrik; GAVRILOV, I.T., elektrik

Pilot-plant testing of the State Institute of Nonferrous Metals flow sheet for the autoclave retreatment of copper-molybdenum intermediate products. Sbor. nauch. trud. Gintsvetmeta no.19:319-339 '62. (MIRA 16:7)

(Nonferrous metals—Metallurgy)
(Leaching)

KLIMENKO, F.D.; VENDROV, I.G.; LOBACHEV, V.A.; KURGUZOV, G.I.

Increasing the replaceability ratio and the intensity of using the equipment. Metallurg 10 no.12:41-42 D '65.
(MIRA 18:12)

KURGUZOV, I.S.[Kurhuzov, I.S.]; VAULIN, Ye.O. [Vaulin, Ye.O.]

Use of butt rmilk in the manufacture of sweet condensed milk. Khar. prom. no.1:64 Ja-Mr '65. (MIRA 18:4)

KURGUZOV, P.I., kand. sel'skokhoz. nauk

Simultaneous placement of trace elements and bacterial fertilizers. Agrobiologiia no.1:142-143 Ja-F '64
(MIRA 17:2)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni Lenina.

KURGUZOV, P.I., kand. sel'skokhoz. nauk

Effectiveness of the use of peat-manure compost for potatoes. Agrobiologiia no.5:726-727 S-O '65. (MIRA 18:9)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni Lenina.

KURGUZOV, S.S.

Device for measuring pulse duration in code track circuits.
Avtom. telem. i sviaz' 8 no.9:33-34 S '64. (MIRA 17:10)

1. Starshiy inzh. kontrol'no-ispytatel'nogo punkta Lyublinskoy distantsii Moskovskoy dorogi.

[illegible], S.S.

Attachment for checking accordion. Avtom., telem. i svyaz' 8 no.11: 32 N '64. (MIRA 17:12)

1. Starshiy inzh. kontrol'nogo punkta Lyublinskoy distantsii Moskovskoy dorogi.

KURGUZOV, V.P.

Semiautomatic single-spindle screwdriver. Biul.tekh.-ekon. inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. 18 no.11:62 N '65. (MIRA 18:12)

L 37664-65 EWT(1)/EWP(e)/EWA(d)

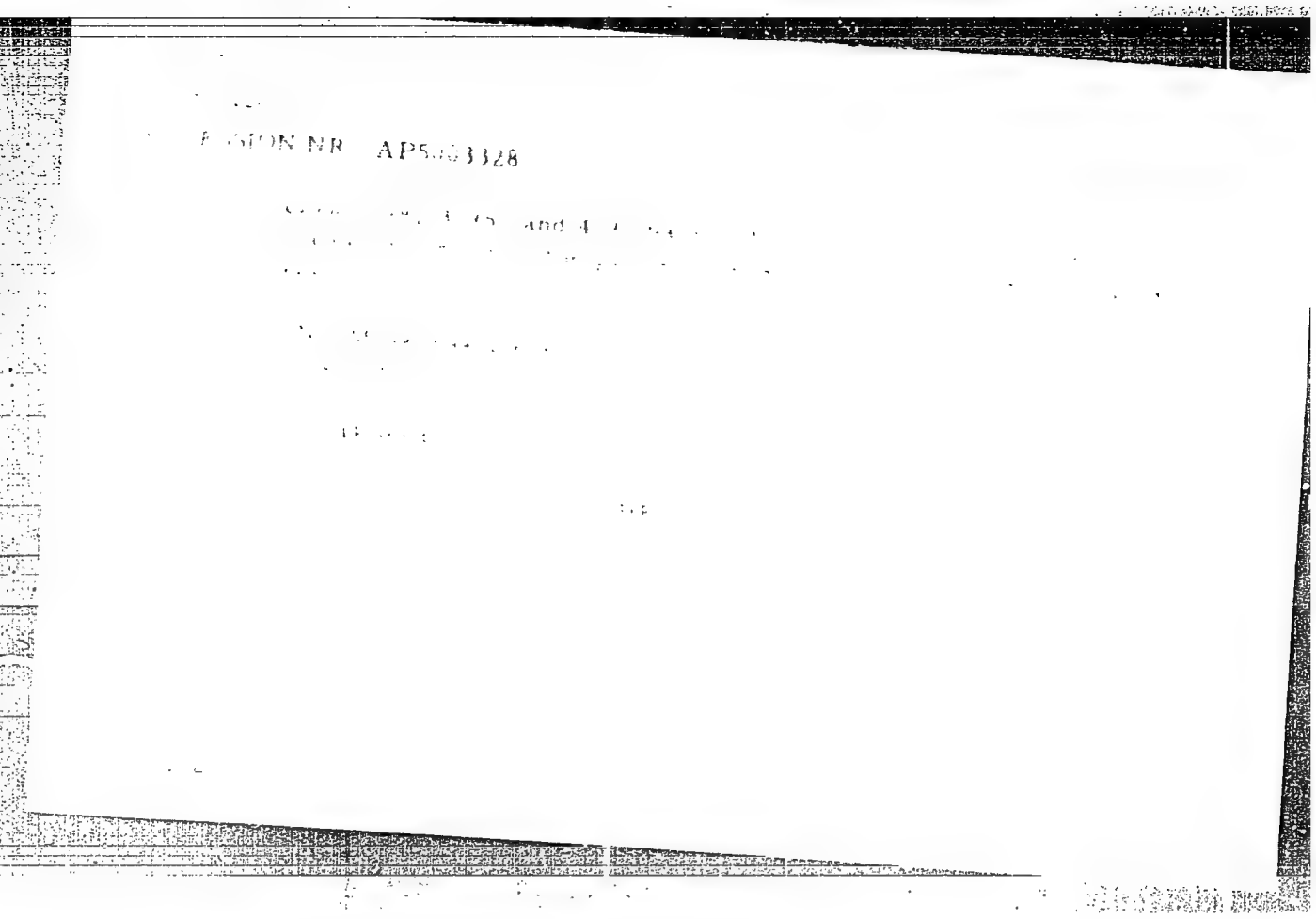
ACCESSION NR: AP5003328

pressure

The pressure was measured at

-mm vortex tube which had a

gas velocity) occurs at the point of emergence of gas from the nozzle. The pressure increases as the stream turns, and then drops.



[redacted]ophilic reagents [redacted] were investi-
[redacted] reagents, in particular,

SUBMITTED: 29Jan64 ENCL: 00

NO REF SOV: 001 OTHER: 00

SUB CODE: MT, GC

KURGUZOVA, Ye.G.

Seminar for senior nurses. Med.sestra 22, no.4:64 Ap '63.
(MIRA 16:7)

1. Chlen Moskovskogo gorodskogo soveta meditsinskikh sester.
(NURSES AND NURSING--CONGRESSES)

KURHANSKI, Miroslaw

Possibilities of agricultural utilization of rettery sewage. Zesz probl post nauk roln 47:183-200 '64

1. Industrial Institute of Bast Fibers, Poznan.

L 08568-67 EWP(k)/EWT(l)/EWT(m)/EWP(w)/EWP(v)/EWP(t)/ETI IJP(c) EM/WW/JD/IW

ACC NR: AP6034136 (A,N) SOURCE CODE: UR/0114/66/000/010/0030/0032

AUTHOR: Kuriat, R. I. (Candidate of technical sciences); Miroshnichenko, Yu. D. (Engineer; Deceased)

ORG: none

TITLE: Thermal stresses in gas turbine nozzle blades under nonsteady-state thermal regimes

SOURCE: Energomashinostroyeniye, no. 10, 1966, 30-32

TOPIC TAGS: gas turbine, nozzle blade, ~~nozzle blade~~ thermal stress, blade cooling, TURBINE BLADE, NOZZLE AREA

ABSTRACT: Figures 1—5 show the experimental data obtained during testing of gas turbine nozzle blades under conditions close to actual. A BESM-2M electronic computer was used for the data reduction. The

Characteristics of Tested Blades

	Solid blade	Hollow cooled blade
Blade chord	52 mm	55 mm

Card 1/7 UDC: 539.371.53.096.62-226.2:621.438.001.5

L 08568-67

ACC NR: AP6034136

Max. blade thickness	11.2 mm	2.5 mm (wall thickness)
Blade height	75 mm	110 mm
Leading edge radius	3.76 mm	5 mm
Trailing edge radius	0.5 mm	0.3 mm
Blade material	EI765 alloy (nickel base alloy)	EI787L (stainless steel)

following conclusions are drawn: 1) experimentally and analytically determined blade stresses show that the maximal stresses occur in the exit edges of solid blades and in the inlet edges of hollow cooled blades; 2) hollow cooled blades are subjected to considerable thermal stresses and can probably be used in high temperature gas turbines only under conditions limiting the number of rapid startups; and 3) the obtained data can be used for the approximate calculation of thermal stresses in blades which are geometrically similar but made of different materials with similar physical properties. Orig. art. has: 5 figures.

[WA No. 76]

Card 2/7

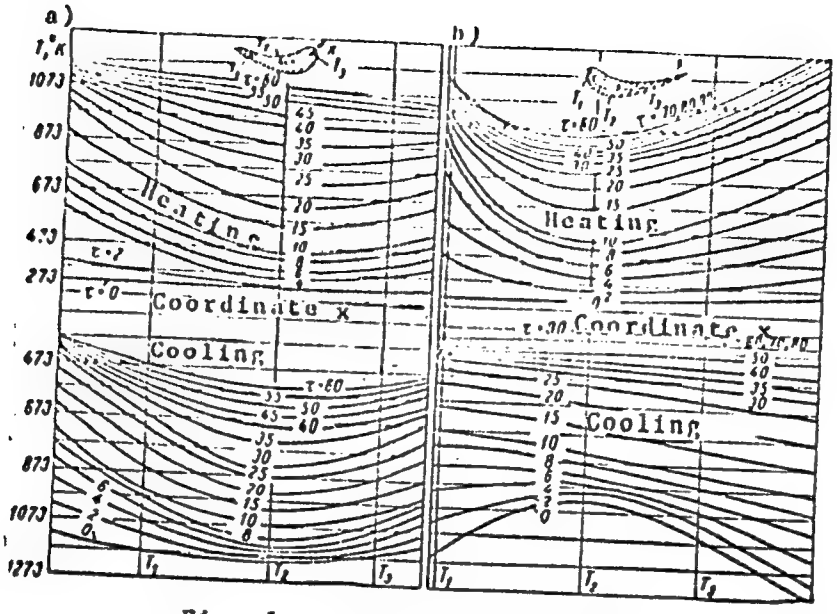


Fig. 1. Temperature fields

a - Solid blade; b - hollow cooled blade under heating and cooling.

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L 08568-67

ACC NR: AP6034136

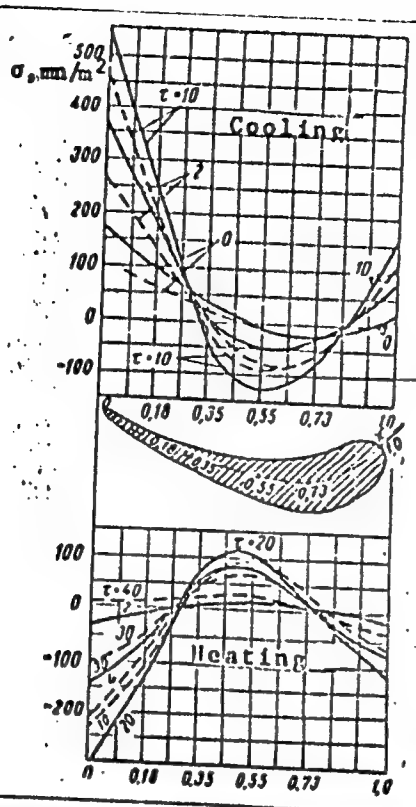

Fig. 2. Stress distribution in solid blade

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ACC NR: AP6034136

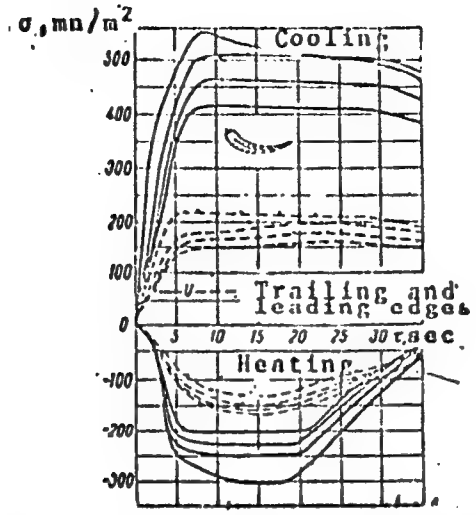

Fig. 3. Stress variation in solid blade during heating-cooling cycle

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L 08568-67

ACC NR: AP6034136

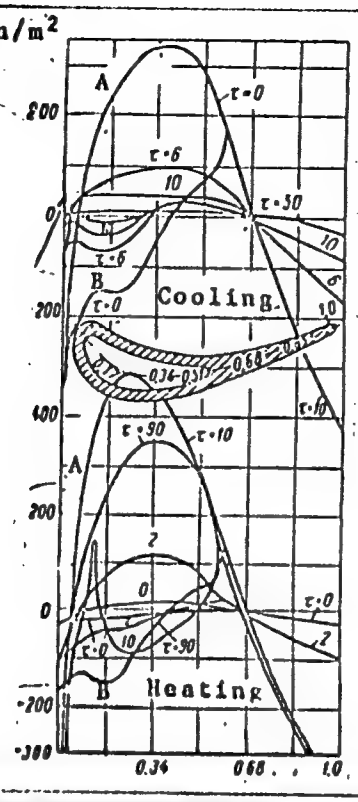

Fig. 4. Stress distribution in hollow cooled blade

A - Concave side of blade;
B - convex side of blade.

Card 6/7

L 08568-67

ACC NR: AP6034136

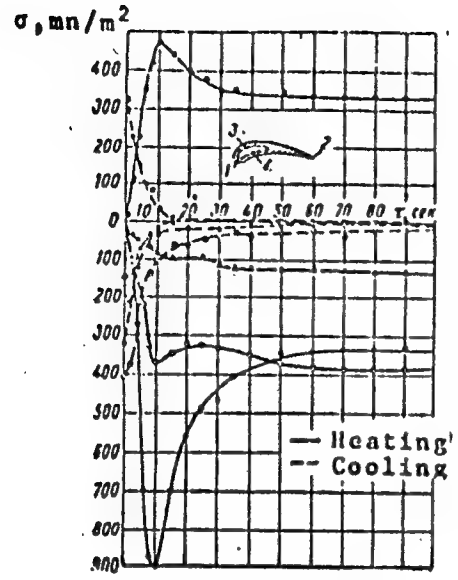

Fig. 5. Stress variation in hollow cooled blade during heating-cooling cycle

1 (○) and 2 (○) - Leading and trailing edges; 3 (▲) and 4 (■) - blade walls.

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 001

Card 7/7

PISARENKO, G.S.; VDOVENKO, V.V.; GOGOTSI, G.A.; GRYAZNOV, B.A.; KRAVCHUK, L.V.; KURIAT, R.I.; TRET'YACHENKO, G.N.

System for testing materials in a high-temperature flow. Energ. i elektrotekh. prom. no.4:22-23 O-D '64.

(MIRA 18:3)

L 21825-66 EWP(k)/EWT(d)/EWT(m)/EWP(h)/ETC(m)-6/T/EWP(1)/EWP(w)/EWP(r)/EWP(t)

ACC NR: AT6008667 (N) SOURCE CODE: UR/0000/65/000/000/0236/0238

IJP(c) EM/MJW/JD/GS

AUTHORS: Kuriat, R. I. (Kiev); Dubinin, V. P. (Kiev); Trot'yachenko, G. N. (Kiev)

ORG: none

TITLE: The effect of thermal fatigue on the durability of materials

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy prochnosti materialov i konstruksionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d. Termoprochnost' materialov i konstruktsionnykh elementov (Thermal strength of materials and construction elements); materialy soveshchaniya, Kiev, Naukova dumka, 1965, 236-238

TOPIC TAGS: thermal stability, cyclic load, high temperature strength, turbine blade, alloy, metallurgic testing machine / IP-4M metallurgic testing machine, EI607A alloy, EI765 alloy, EI827 alloy, ZhS6K alloy

ABSTRACT: The thermal stability of nozzle blades of EI607A, EI765, and EI827 alloys is tested by a method described earlier by G. N. Trot'yachenko, R. I. Kuriat, L. V. Kravchuk (Voprosy vysokotemperaturnoy prochnosti v mashinostroyenii, Izd-vo AN UkrSSR, 1963). The blades of EI607A were tested under conditions of 1173 ⇄ 343K, and the others under conditions of 1273 ⇄ 343K. All blades had a height of 72 mm and a chord of 52 mm. Specimens with a diameter of 5 ± 0.05 mm and an effective length of 25 mm

Card 1/2

L 21825-66

ACC NR: AT6008667

cut from blades were tested for durability with an IP-4M machine, under cyclic loading. Alloy EI765 was found to have the better thermal stability; alloy EI827 was found to have the better durability. Orig. art. has: 1 photograph and 1 table.

SUB CODE: 11/ SUBM DATE: 19Aug65/ ORIG REF: 002

Thermal stress 26

Card 2/2 mt

TRET'YACHENKO, G.N., kand. tekhn. nauk; MOZHAROVSKIY, N.S., kand. tekhn. nauk; KRAVCHUK, L.V., inzh.; KURIAT, R.I., inzh.

Investigation of the thermal fatigue of the 1Kh18N9T alloy taking into consideration boundary conditions of heat exchange. Izv. vys. ucheb. zav.; mashinostr. no.2:43-50 '63. (MIRA 16:8)

1. Kiyevskiy politekhnicheskiy institut.

L 31115-66 EWT(l)/EWP(m)/EWT(m)/EWP(w)/EAA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWA(l)/
ACC NR: AT6008671 (N) SOURCE CODE: UR/0000/65/000/000/0261/0268
ETC(m)-6 IJP(c) JD/EM/WB/GS

AUTHORS: Pisarenko, G. S. (Academician AN UkrSSR) (Kiev); Tret'yachenko, G. N. (Kiev); Gogotsi, G. A. (Kiev); Kravchuk, L. V. (Kiev); Kuriat, R. I. (Kiev); Vdovenko, V. V. (Kiev); Gryaznov, B. A. (Kiev)

ORG: none

TITLE: Apparatus for investigating characteristic strength of materials and structural elements in high-temperature gas streams

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy dinamicheskoy prochnosti materialov i konstruktsionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d, Termoprochnost' materialov i konstruktsionnykh elementov (Thermal strength of materials and construction elements); materialy soveshchaniya. Kiev, Naukova dumka, 1965, 261-268

TOPIC TAGS: high temperature strength, gas flow, temperature test, test chamber, aerodynamic environment test

ABSTRACT: The details of a test apparatus for investigating the high-temperature strength of materials and parts are described. This apparatus is used to evaluate the fatigue strength of brittle and plastic structural elements (such as gas turbine blades), the thermal shock characteristics of various materials, their thermal

Card 1/2

L 31115-66

ACC NR: AT6008671

stability, oxidation resistance at high temperatures, etc. The apparatus consists of a gas dynamic test bed, a high-temperature flow generator (from 600 to 3000K), and an instrumentation complex for measuring and recording the flow temperature and other parameters. The gas flow can attain velocities up to Mach 1.5 at a flow rate of 1.7 kg/sec, and pressures of 80 newtons/cm^2. The air stream is heated successively in three combustion chambers and pumped through a blow-through chamber. Three types of blow-through chambers are used as test sections: one for a continuous test run, another for a controlled duration test run, and a third type for instantaneous exposure and removal of the model. The instrumentation consists of thermocouples, automatic recording potentiometers, calorimeters, pyrometers, oscillograms, and flow meters. The apparatus also contains a device for controlling the mixture of the test gas. Orig. art. has: 4 figures.

SUB CODE:20,13/ SUBM DATE: 19Aug65

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ACCESSION NR: AT4002338 S/3036/63/000/000/0212/0221

AUTHOR: Tret'yachenko, G. N. (Kiev); Kuriat, R. I. (Kiev); Kravchuk, L. V. (Kiev)

TITLE: Some results of gas turbine blade thermal fatigue tests

SOURCE: Voprosy* vy*sokotemperaturnoy prochnosti v mashinostroyenii. Vtoroye nauchnotekhnicheskoye soveshchaniye, 1962. Trudy*. Kiev, 1963, 212-221

TOPIC TAGS: gas turbine blade, thermal fatigue, E1765 alloy thermal fatigue, E1607 alloy thermal fatigue, E1787L alloy thermal fatigue, E1827 alloy thermal fatigue, nickel base alloy, gas turbine solid blade, gas turbine hollow blade, gas turbine, turbine solid blade, turbine hollow blade, E1765 alloy, E1607 alloy, E1787L alloy, E1827 alloy, hollow blade, solid blade

ABSTRACT: The purpose of this study was to test the thermal fatigue of hollow turbine blades made of materials most typical for such use under conditions approaching actua' operation, and to analyze possible irreversible changes of interest in relation to the current status of this problem in the literature. The tests involved actual solid first-stage turbine blades of one design but 3 different materials (alloys E1765, E1607A, E1827), and somewhat larger hollow blades from the second stage of a turbine (see Fig. 1 in the Enclosure), made of alloy E1787L. The test was based on 1000 cycles, with temperatures increasing to 800-

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1000C in 90 seconds; temperature changes were recorded by means of a model N-700 oscillograph, and the number of fissures and changes in dimensions produced were determined. The formation of fissures is shown in Fig. 2 of the Enclosure. The changes in dimensions of the specimen during the test are presented in an extensive table. Changes in the microstructure of the material are shown in Fig. 3 of the Enclosure. Orig. art. has: 2 tables, 3 graphs, 4 illustrations.

ASSOCIATION: IMSS AN USSR

SUBMITTED: 00	DATE ACQ: 03Dec63	ENCL: 03
SUB CODE: AP, MA	NO REF SOV: 009	OTHER: 002

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ACCESSION NR: AP4025423 S/0096/64/000/004/0045/0049

AUTHORS: Gotsov, L. B. (Candidate of technical sciences); Tret'yachenko, G. N. (Candidate of technical sciences); Kuriat, R. I. (Engineer)

TITLE: Structural strength of vanes on gas turbines

SOURCE: Teploenergetika, no. 4, 1964, 45-49

TOPIC TAGS: vane, turbine vane, gas turbine vane, metal strength, vane stiffness, vane heat resistance, steel EI 765, steel EI 827, steel EI 607 AL, steel EI 787L, steel EI 765L [L. 1]

ABSTRACT: This investigation was undertaken because of the formation of cracks on turbine vanes forged of steel EI-607A. The experimental vanes were forged of steels EI-765 and EI-827 and cast of steels EI-607AL, EI-787L, and EI-765L [L. 1]. The chemical composition (in %) of these metals is: for EI-765, C--0.12, Cr--14.75, Ni--trace, Ti--1.22, Al--1.84, W--4.94, Mo--3.96; EI-827 is a highly heat-resistant nickel steel; for EI-607Al, C--0.02, Cr--15.37, Ni--trace, Ti--1.63, Nb--1.10, Al--0.51; for EI-787L, C--0.04, Cr--14.5, Ni--34.16, Ti--2.73, Al--1.00, W--3.03; for EI-765L, C--0.10, Cr--14.29, Ni--trace, Ti--1.44, Al--1.63, W--4.60,

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Mo--3.80. The vanes made of the first three steels were solid, those made of the last two were hollow. Their shapes and the location of thermocouples are shown in Fig. 1 on the Enclosure. The cast vanes (containing a small number of fine holes due to the presence of Ti and Al) were tested in the temperature cycles of 70-900C and 70-1000C, while the hollow ones were tested at 70-800C and 70-900C. The number of test cycles ranged up to 1000, with each lasting 2.25-4.20 min. Cooling air was delivered at the rate of 0.0075 kg/sec per blade and hot gas at the rate of $\leq$0.25 kg/sec per jet at an entry velocity of $\leq$ 100 m/sec. The number of thermal cycles sustained by each blade prior to the formation of cracks was recorded and the growth of the first crack (in the solid vanes) was observed. Both the cooled and the uncooled hollow vanes were studied. In all cases the majority of cracks formed at the outflow edges of the vanes. Though the number of experiments conducted was too small to form final conclusions, the preliminary observations indicate that: 1) steel EI-787L should be used in hollow guide vanes and EI-607A in solid ones for temperatures below 800C; 2) steel EI-627 may be used in vanes at temperatures up to 1000C on turbines requiring a limited number of starts (the long-term qualities of this steel should be checked further); 3) cooled vanes of steel EI-787L and EI-765L may be employed up to the temperature of 1200C, provided that the number of fast starts is limited; 4) hollow cast vanes should be

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thoroughly inspected for dimensional irregularities and metallurgical flaws. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: Zavod "Ekonomayzer" (Ekonomayzer Plant)

SUBMITTED: 00 DATE ACQ: 20Apr64 ENCL: 01

SUB CODE: ML NO REF SOV: 002 OTHER: 000

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